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In This Issue

- Travelling With Your Micro
- Portable Roundup
- Macintosh BASIC — Review
- Why Some Circuits Do Not Work Properly — Les Solomon
- The Correspondent, Complete Mailing Software for TRS-80 — Part I
- What's New At Comdex
- Stan Veit's — Micro History

SANYO SPECIALS
THE COMPUTER WAREHOUSE
See Page 9

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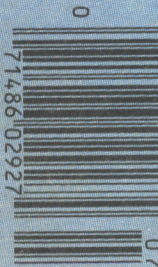
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INSIDE FRONT COVER



ATARI

Applying The Atari

by Jeff Brenner

In store for this month is a routine for using a numeric keypad, some much needed info of PEEKs and POKEs on the XL, and a printer utility called *ATASCII Lister*. But first, let's look at some readers' questions...

Reader Mail

Q. I have recently become the proud owner of the Atari 800XL, an Atari 1050 disc drive and an Okimate 10 printer. I purchased the Synapse series, *Syncalc*, *Synfile* and *Syntrend* and this is where my problem lies. My Okimate 10 printer will not print the graphs in the *Syntrend* program. Mechanically the printer is sound but apparently it is incompatible with the program.

Although Okidata has not responded to my questions, Synapse has told me "You can print your graphs on the Okimate if you use a screen dump program for the Okimate that works with Graphics Mode 8 disk files—possibly available from Okidata." I called Okidata and they have never heard of "Graphics Mode 8 disk files" and neither have I. However, in an advertisement I did see an ad for "Printwiz" which seems to be what I am looking for, but I am not sure. Is this the answer or is there something else, and if there is what is it?

Robert Lavoie
Chicopee, MA

A "Graphics Mode 8 disk file" is the data of a Graphics 8 screen which has been saved on disk. Therefore, to print *Syntrend* graphs, you can save the screens to disk and then use a dump program to print the disk files.

While *Printwiz*, (\$29.95 from Allen Macroware, P.O. Box 2205, Redondo Beach, CA 90278, 213-376-4105) is advertised to work with Okidata printers, this does not necessarily mean it is compatible with the newer Okimate printers. Remember, Okidata makes and has made many other printer models besides its new Okimate color units. To find out for sure, I contacted Jerry Allen of Allen Macroware. Allen said that the program seems to work with the Okimate 10 and 20, although it was not specifically designed for those units. He

assured me that a fully compatible version would be available by May (1985), which means it should be out by the time you read this.

If you decide to purchase this program, I suggest you enclose a note with your order describing exactly what you need it for: printing the graphs from *Syntrend* on an Okimate 10.

I have requested an Okimate manual from Okidata and hopefully I'll be able to publish a Graphics 8 disk file printer dump in a future column. If you can't wait, though, *Printwiz* looks like it should help you. In addition to its screen dump capability, the program offers several other useful features.

Q. I'm new to Atari and to *Computer Shopper* and it's good to have published resources and personal replies to questions. One question that may be useful to all your readers: For those of us who have invested in the Atari touch tablet (for its more appropriate features for the Atari, as opposed to the Koala), we now find there is no new software (despite earlier rumors) and there are no published listings for incorporating it into our BASIC (or other) programs. How can I program the Touch Tablet into my own programs and other graphic modes? It would be extremely useful if the touch tablet could be made to work with graphics software such as Reston's *Movie Maker* and Epyx's *Fun with Art*. Is it possible to do this with the touch tablet?

Lattie Smart
Havre de Grace, MD

Q. I was wondering if you know the code of an Atari touch tablet. For example, a joystick code is `A = STRIG(0)`. Could you please give information on the touch tablet code?

Charles Flanders
Ottuma, IA

The touch tablet can be read as if it were two paddles, with `PADDLE(0)` and `PADDLE(1)`. As you move the stylus horizontally over the pad, `PADDLE(0)` changes; vertically, `PADDLE(1)` changes. The values of `PADDLE(0)` and `PADDLE(1)` range from 0 through 228. When the stylus is removed from the tablet, both values are

zero. The touch tablet buttons can be read in a similar manner as they correspond to the paddles' triggers. `PTRIG(0)` or `PTRIG(1)` returns a value of zero when the corresponding button is depressed, and a value of one when it is not depressed.

By multiplying or dividing `PADDLE(0)` and `PADDLE(1)` and subtracting an offset value from them, you can make the pad "fit" into any graphics mode screen.

Since the touch tablet is an extremely sensitive device, the values of `PADDLE(0)` and `PADDLE(1)` will often vary slightly even while the stylus is held at one point on the pad. This same effect occurs with a paddle or a light pen. To compensate for this, you must choose a threshold level of movement, below which any movement is ignored. This threshold level is the least value that `PADDLE(0)` and `PADDLE(1)` must change by before the movement is recorded on the screen. This usually involves storing the previous `PADDLE` values, and then

checking them against the new values. For example, if you decide on a threshold of five, you might use a program segment as follows:

```
10 IF ABS(OLDPAD0-PADDLE(0))>=5 THEN GOTO 60
20 IF ABS(OLDPAD1-PADDLE(1))>=5 THEN GOTO 60
30 OLDPAD0=PADDLE(0):REM Did not make threshold; store old values.
40 OLDPAD1=PADDLE(1)
50 GOTO 10:REM Go back and try again.
60 REM Routine to plot the changes would go here.
```

Lines 10 and 20 check if the difference between either of the new `PADDLE` values and the corresponding old values (stored in the `OLDPAD` variables) are at least five. If this minimum is achieved, the plotting is performed. Otherwise, the new `PADDLE` values become the old values and the program attempts to read the tablet again.

I don't have room this month, but in a future column I'll list a complete touch tablet routine in BASIC.

Regarding the use of the touch tablet with other soft-

ware, programs not specifically designed for the touch tablet generally will not work with it. The touch tablet is a much more complicated device than

the joystick and hence requires a more elaborate routine to incorporate it into software. However, programs which are compatible with game paddles can be used with the touch tablet; horizontal and vertical motion on the tablet correspond to the rotation of the first and second paddles, respectively. This is not to say that the touch tablet can effectively replace the paddles; indeed, in most cases, the tablet will be terribly cumbersome to use in place of the paddles.

Continued on page 58

Kennedy Approach

A Review
by Jeff Brenner

So you've always wanted to be an air traffic controller. Probably not, but **Kennedy Approach** lets you come close to experiencing the awesome responsibility and pressure of

air traffic control.

It Talks!

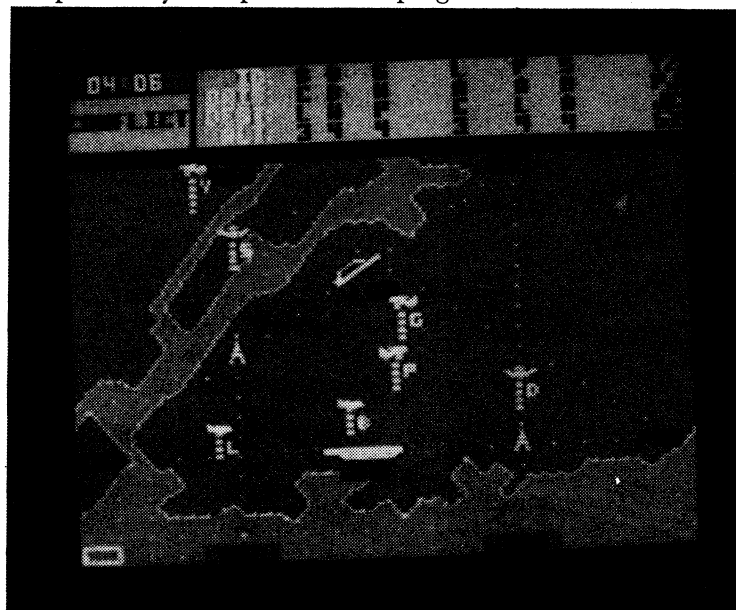
Overshadowing all other features of **Kennedy Approach** is its software-synthesized voice. While several computer programs on the market also

"talk," none of them matches the extent or quality of the speech generated by **Kennedy Approach**. Furthermore, these other games typically use computer speech as a mere enhancement to the existing sound effects, whereas the voice in **Kennedy Approach** is so superbly integrated into the game play that it is difficult to imagine the simulation without it. The illusion of reality that the voice induces is unbelievable. If you turn down the volume, you have an entirely different game.

Kennedy Approach: The Name

Before I get into the details of the **Kennedy Approach**, I should first mention that it deserves a better name. Even after you've learned that you're to assume the role of an air traffic controller and not of an assassin, the name "Kennedy Approach" fails to convey the

Continued on page 58



New York Air Traffic Screen

Applying The Atari Continued from page 57

TypeSetter Update

In the November 1984 issue of *Computer Shopper* I reviewed *TypeSetter*. I gave it a two-star overall rating (fair), and among my many comments were that users should be able to design their own typefaces and that the program should support the higher resolution modes available on the current Epson, Gemini, and compatible printers. Sure enough, the manufacturer (DataArts Software, P.O. Box 1613, Troy, NY 12181) has released a font editor (\$24.95) and a new double-density version of *TypeSetter* (\$29.95). If you've already purchased the lower density version, you can get an update from DataArts for \$9.95.

TypeSetter offers a variety of additional typefaces (at \$11.95 for 5) and has an advantage over *The Print Shop* (\$44.95 from Broderbund Software, 17 Paul Drive, San Rafael, CA 94903) in that it can print lower case characters. Therefore, it is better suited for some applications. But for ease-of-use and specific applications such as printing greeting cards, banners and signs, *The Print Shop* is hard to beat.

Numeric Keypad

Many readers took advantage of a recent B.G. Micro advertisement in *Computer Shopper* which offered Atari numeric keypads for \$7.95. Considering that the keypad originally sold for over ten times the price, this is a great buy. If you can still get one at this price and haven't gotten one yet...GET ONE! There is

PROGRAM 1

```

FNJ 10 REM NUMERIC KEYPAD PROGRAM #1
KFJ 20 REM COPYRIGHT 1985 JEFF BRENNER
JWJ 30 TOT=0:FOR I=1536 TO 1607:READ NUM
OOJ 40 POKE I,NUM:TOT=TOT+I+NUM:NEXT I
KOJ 50 IF TOT=120212 THEN A=USR(1536):END
FBJ 60 PRINT "ERROR - CHECK DATA":END
LCJ 70 DATA 104,162,006,160,011,169
LUJ 80 DATA 007,032,092,228,096,174
LAJ 90 DATA 016,208,240,006,202,134
MWJ 100 DATA 204,076,051,006,165,204
NIJ 110 DATA 240,002,208,023,230,204
NJJ 120 DATA 173,000,211,041,015,170
MBJ 130 DATA 173,001,210,201,001,240
NCJ 140 DATA 002,162,016,189,054,006
NLJ 150 DATA 141,252,002,076,098,228
NAJ 160 DATA 052,024,029,027,035,051
MWJ 170 DATA 053,048,043,031,030,026
NMZ 180 DATA 050,034,012,014,028,155

```

a catch, however; no supporting software or documentation is included except for a schematic and a truth table. Fortunately, I'm here to make it easier for you to apply your Atari, and a numeric keypad is often a welcomed convenience when programming. So get out your Atari CX85 Numeric Keypad, plug it into Port 1, enter the program listed under **Program 1**, save it, press **SYSTEM RESET**, and run it! It is necessary to press **SYSTEM RESET** at any time before the program is run to properly initialize the joystick port.

When you run this BASIC program, it incorporates a machine language program into the Atari's vertical blank routine, which is executed each time a screen frame is drawn, or 60 times per second. The machine language program decodes any key pressed on the keypad. It then makes the Atari think that the key has been pressed on the keyboard by storing an appropriate value into the keyboard register at location 764. As a result, the

keypad functions like your Atari keyboard, except a key pressed on the keypad will not repeat when held down. The YES and NO keys return Y and N respectively, and the + /RETURN key is interpreted as the RETURN key. DELETE is used to back space, and ESCAPE functions like the Atari ESC key.

Once you've run **Program 1**, you can erase it from memory with NEW and proceed with your own BASIC programming. The keypad will be active. If **SYSTEM RESET** is pressed, it will be necessary to reinitialize the keypad program by typing A = USR(1536).

Program 2 contains the same program except when the YES key is pressed, a comma is printed instead of a Y. You'll truly appreciate this when entering many lines of data statements. With your right hand on the keypad you can type in the line number, use your left hand to type DATA on the regular keyboard, and use your right hand again to

PROGRAM 2

```

FNJ 10 REM NUMERIC KEYPAD PROGRAM #2
KFJ 20 REM COPYRIGHT 1985 JEFF BRENNER
JWJ 30 TOT=0:FOR I=1536 TO 1607:READ NUM
OOJ 40 POKE I,NUM:TOT=TOT+I+NUM:NEXT I
KOJ 50 IF TOT=120201 THEN A=USR(1536):EN
FBJ 60 PRINT "ERROR - CHECK DATA":END
LCJ 70 DATA 104,162,006,160,011,169
LUJ 80 DATA 007,032,092,228,096,174
LAJ 90 DATA 016,208,240,006,202,134
MWJ 100 DATA 204,076,051,006,165,204
NIJ 110 DATA 240,002,208,023,230,204
NJJ 120 DATA 173,000,211,041,015,170
MBJ 130 DATA 173,001,210,201,001,240
NCJ 140 DATA 002,162,016,189,054,006
NLJ 150 DATA 141,252,002,076,098,228
NAJ 160 DATA 052,024,029,027,035,051
MUJ 170 DATA 053,048,032,031,030,026
NMZ 180 DATA 050,034,012,014,028,155

```

SELECTED PEEKS AND POKES FOR THE XL

PEEK/POKE	LOCATION(S)	NAME	VALUE=EFFECT/MEANING
PEEK/POKE disabled.	621	KEYDIS	55 =Keyboard use disabled.
POKE	622	FINE	0 =Keyboard use enabled. 255=Prepare for fine scrolling. 0 =Prepare for normal scrolling.
PEEK/POKE	731	NOCLIK	Takes effect after GRAPHICS 0 command. 255=Keyboard click disabled.
PEEK	732	HELPGF	0 =Keyboard click enabled. 17 =Help key pressed.
PEEK/POKE	756	CHBAS	Clear with POKE 732,0 after reading. 224=Normal character set. 204=International character set.

"Table 1"

type the numbers, commas and RETURN. Next month you'll learn how to redefine any key on the numeric keypad.

meaning of values which are PEEKed. We'll get into the more complicated PEEKs/POKEs in future months.

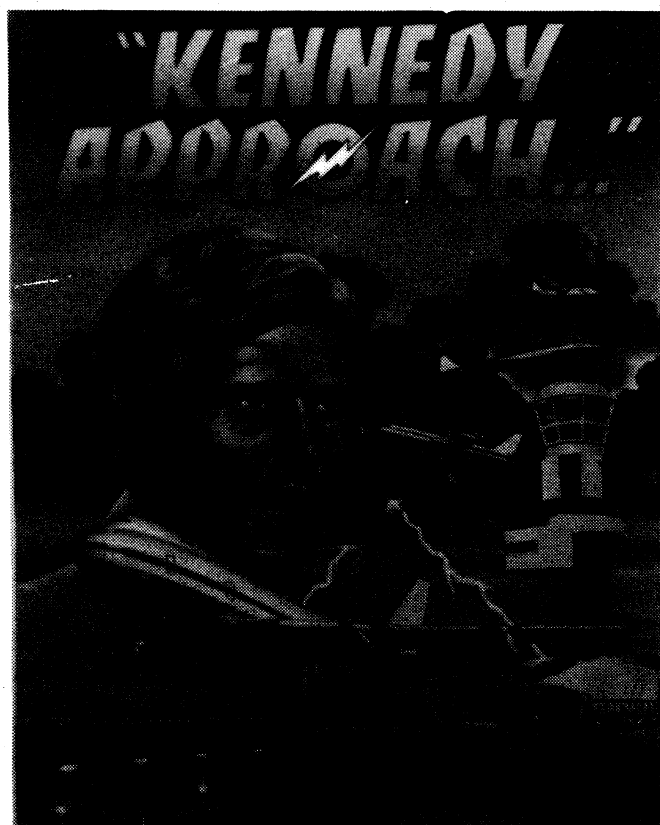
XL Pokes and Peeks

As I promised last month, I'm including a list of a few PEEKs and POKES unique to the XL. **Table 1** shows whether the location is generally PEEKed or POKEd, the values to POKE and their effects or the

ATASCH Lister

Listing BASIC programs to the printer can present a problem to the programmer, especially when the program is written in Atari BASIC. The

Continued on page 140



Kennedy Approach Continued from page 57

thrill and realism of the simulation. Additionally, the name refers to only one of the five airport areas that you can choose to control, the New York area, albeit the John F. Kennedy International Airport is probably better known than the others, such as Atlanta's William B. Hartsfield Airport. Nonetheless, the Kennedy airport simulation, in which you control air traffic for both the Kennedy and LaGuardia International airports, is the most difficult of the five, and consequently, the option you'll probably play the least.

Well, it's too late for MicroProse to do anything about the name, so let me air one more peeve: the "computer access code." Each time you load the game, a number is printed on the screen. You must look up this number in

the instruction manual to find the corresponding password. Typing the correct password will let you play the game, otherwise you're subject to watching the demonstration mode. While this look-up password system was intended to thwart software pirates, it is a nuisance to have to fetch the booklet each time you want to play the game. And if your method of storing software manuals is anywhere comparable to mine, you'll be lucky enough to even find the booklet when you need it. I must give some credit to MicroProse, though, for making at least one improvement since implementing the password scheme in its F-15 Strike Eagle simulation: The codes printed in the Kennedy Approach booklet have been enlarged to the point of readability. The microscopic print appearing in the F-15 Strike Eagle manual was dif-

ficult to read without a magnifying glass.

If Kennedy Approach were anything less, I would make this code business an even bigger issue, but fortunately (for MicroProse) the game is good enough to partially warrant the inconvenience.

Kennedy Approach: The Game

At the start of the game you choose one of five skill levels. Depending on the level you choose, you are given a listing of up to five cities, each with a particular work shift. You can select one of these cities to work in. Of the five cities, the easiest work is found in Atlanta, Georgia, at the Hartsfield International Airport. Here, the surrounding terrain is flat, the weather is ideal, the number of arrivals and departures

Continued on page 142

Applying The Atari Continued from page 58

reason is that the Atari features numerous non-ASCII characters which can be placed in a program. ASCII characters form the American Standard Code for Information Interchange. Virtually all printers can print the ASCII characters. "ATASCII" is short for Atari ASCII, and includes most of the ASCII characters but also contains Atari's special

characters. These characters include all the control key graphics characters, the inverse video characters, and the cursor control characters. Often a program uses inverse video to highlight words, or a wide variety of characters representing machine language code in a USR statement. When these are listed to the printer, the printer might substitute its own characters for the codes it receives, or it might interpret

some of the characters as control codes and do unpredictable things.

The non-printable Atari characters presented a problem to me, as a programmer, when copyrighting software. To obtain a copyright, the Library of Congress requires, among other things, a listing of the program. (Unfortunately, they don't deal with disks or cassettes yet.) However, my program was 20% BASIC and 80% machine language stored as characters in USR statements. I needed a routine to print these characters, and thus the ATASCII Lister evolved. It can, of course, be used for any application requiring an exact listing of an Atari program.

The ATASCII Lister uses the high-resolution graphics capability available on most of today's printers to print the Atari's characters. It will work with the Epson MX-80, MX-100, FX-80, RX-80, Gemini 10X, 15X or graphics-compatible printer.

Using the Program

Enter the program and SAVE it to cassette or disk. Next, load in the program that you wish to list and LIST it to cassette or disk with the LIST "C" or LIST "D: filename" command. When you SAVE a program, the program is saved in its tokenized form, which means that BASIC words such as PRINT and GOTO saved as single byte codes. By LISTing the program, each character is saved as is (i.e. PRINT is saved as five bytes for the "P," "R," "I," "N," and "T"), thus making it readable by our ATASCII Lister program.


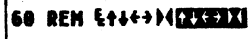
ATASCII Lister

```

EEJ 10 REM ATASCII LISTER
KFJ 20 REM COPYRIGHT 1985 JEFF BRENNER
NTJ 30 OPEN #3,0,"P:"
KYJ 40 RESTORE 290:FOR I=0 TO 218:READ N:POKE 1536+I,N:NEXT I
RJJ 50 DIM N$(15),DN$(17),TMP$(2040),C$(120),D$(1),E$(1),MS$(30):POKE 766,0
HJJ 60 DN$="D":OPEN #1,4,0,"E:"
VJJ 70 PRINT "CASSETTE OR DISK":INPUT E$:IF E$="C" THEN DN$="C":GOTO 90
GCJ 80 PRINT "FILENAME: D:":INPUT #1:N$:IF N$(1,2)="D:" THEN N$=N$(3,LEN(N$))
ANJ 90 DN$(LEN(DN$)+1)=N$:OPEN #2,4,0,DN$:GOTO 110
LIJ 100 PRINT "ERROR #":PEEK(195):GOTO 80
LJJ 110 TRAP 110:PRINT "DENSITY (1-2):":INPUT #1:D:IF D<1 OR D>2 THEN 110
YJJ 120 RESTORE 120:FOR I=1 TO D:READ C:NEXT I:D$=CHR$(C):DATA 75,76
HJJ 130 TRAP 130:PRINT "CHARACTERS PER LINE (NORM=38)":INPUT #1:CPL
QFJ 140 CL=CPL*8:H1=INT(CL/256):L1=CL-H1*256
HJJ 150 TRAP 260:POKE 766,1:INPUT #2:C$:PRINT C$:LN=LEN(C$):C=1
LVJ 160 C$(LEN(C$)+1)=CHR$(155):TMP$(1)=CHR$(0):TMP$(2040)=CHR$(0):TMP$(2)=TMP$
SJJ 170 A=USR(1536,ADR(C$),ADR(TMP$)):I=0:L=1:A=USR(1716,ADR(TMP$))
IEJ 180 TRAP 270:PRINT #3:CHR$(27):CHR$(64):I=0:L=1
HPJ 190 IF LN<(CPL+1) THEN 230
GTJ 200 LN=LN-CPL
EJJ 210 TRAP 270:PRINT #3:CHR$(27):CHR$(64):CHR$(27):D$:CHR$(L1):CHR$(H1)
NAJ 220 PRINT #3:TMP$(I*8+1,(I+CPL)*8):CHR$(10):I=I+CPL:GOTO 190
ABJ 230 K=LN*8:H=INT(K/256):L=K-H*256
BGJ 240 TRAP 270:PRINT #3:CHR$(27):CHR$(64):CHR$(27):D$:CHR$(L):CHR$(H)
MHJ 250 PRINT #3:TMP$(I*8+1,I*8+K+1):CHR$(10):GOTO 150
NEJ 260 PRINT "END OF LISTING":CLOSE #3:END
GJJ 270 PRINT "RESET PRINTER - PRESS RETURN":INPUT #1:E$
VEJ 280 GOTO PEEK(186)+256*PEEK(187)
JJJ 290 DATA 104,104,133,205,104,133,204,104,133,207,104,133,206,169,0,168
AOJ 300 DATA 133,203,177,204,170,232,224,156,208,3,76,169,6,10,38,203
UEJ 310 DATA 74,201,96,176,22,201,64,176,9,201,32,176,11,105,64,76
OMJ 320 DATA 59,6,56,233,32,76,59,6,56,233,32,133,208,169,0,133
HBJ 330 DATA 209,24,162,3,24,38,208,38,209,202,208,248,24,173,244,2
COJ 340 DATA 101,209,133,209,160,7,162,1,177,208,157,171,6,136,232,224
SOJ 350 DATA 9,208,245,169,8,141,170,6,160,0,162,8,177,206,62,171
CWJ 360 DATA 6,42,145,206,202,208,245,165,203,240,6,177,206,73,255,145
DVJ 370 DATA 206,24,165,206,105,1,133,206,165,207,105,0,133,207,206,170
PTJ 380 DATA 6,173,170,6,240,3,76,106,6,24,165,204,105,1,133,204
BPJ 390 DATA 165,205,105,0,133,205,76,13,6,96,0,0,0,0,0
GMJ 400 DATA 0,0,0,0
JJJ 410 DATA 104,104,133,205,104,133,204,169,154,133,206,230,206,162,8,160
CKJ 420 DATA 0,177,204,197,206,208,4,169,151,145,204,200,192,0,208,241
TOJ 430 DATA 230,205,202,208,234,96,155

```

Figure 2

10 REM This program listing was generated by ATASCII Lister.
 20 REM Note how all of the Atari's characters can be printed.
 30 REM Even graphics characters are printed:
 40 REM 
 50 REM Control characters too:
 60 REM 
 70 END

"Figure 1"

Seduction. . .

more than a game!



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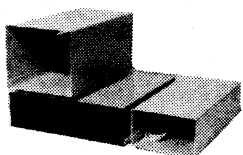
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Next, you are asked for the number of characters per line. Make sure you don't select too many characters per line for the particular resolution you chose. Each character requires eight dots. Thus, an eight-inch line printer using a 60 d.p.i. resolution can print a total of 480 (8 inches x 60 d.p.i.) dots, or 60 characters per line (480 dots per line/8 dots per character). This computation can be used to determine the maximum number of characters per line for your particular printer and for the resolution you are using.

When the number of characters per line has been entered, the listing will be printed - in the Atari's own characters! If you get an "ERROR - CHECK DATA" message, then check the program carefully for errors. You'll get a "RESET PRINTER - PRESS RETURN" message if your printer goes off-line for some reason, such as when the paper is out. Press RETURN when the printer is back on-line.

The ATASCII Lister makes your printer and your Atari fully compatible. No longer will you have restrictions when you need to list programs to your printer.

Continued on page 143

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Kennedy Approach
Continued from page 58

tures is balanced, and the traf-
fic is limited to only one type
of plane.

The next in difficulty is the
Stapleton International Airport
in Denver, Colorado. Here you
must make sure planes clear
the mountains and avoid
storms.

The combination of the
Dallas Fort Worth Interna-
tional Airport and the Dallas

Love Field offers a large
number of arrivals and depart-
tures to make it the third most
difficult.

The next level is the Dulles
International and the
Washington National airports
in Washington, D.C. Here, the
air traffic is made up of three
types of aircraft, and you must
avoid passing over restricted
areas including the
Washington Monument and
the White House.

The most challenging option

is the John F. Ken-
nedy/LaGuardia combination,
with enough arrivals and
departures to insure continuous
perspiration and headache. I
gave a shot at the Kennedy
simulation only to find myself
helplessly frustrated and vow-
ing never to have anything to
do with air traffic control.
Since playing that skill level,
I've had recurrent nightmares
in which I'm responsible for 26
misguided planes, jets and
Concordes all about to meet at
one point and in one boom.
MicroProse recommends
becoming a real air traffic con-
troller if you can handle this
level.

Directing The Traffic

Once you get your job,
you're presented with a control
area map, in which you get a
graphic view of the airstrips,
the planes, and various terrain
features. Additionally, this
video map shows you the time
(your shift ends on the hour),
and flight plans for each air-
craft flying or to be flying in
your area.

As an air traffic controller,
you can communicate with
any plane on your control map
by moving a cursor over the
plane, or by typing the plane's
ID letter on the keyboard.
Positioning the cursor is much
more convenient than typing
on the keyboard. However, it
is possible for more than one
plane to reside at the same
screen position at once, though
at different altitudes, thus
rendering it impossible to

specify a particular plane with
the cursor. In this case, you
would have to use the
keyboard.

Once you've specified a
craft, you use the joystick to in-
struct the pilot to head in a
particular direction and to
reach a certain altitude. In this
manner you launch all planes,
direct planes already in the air,
and give planes clearance to
land (by specifying an altitude
of zero.)

Nothing actually happens to
the plane, though, until the
pilot receives your message.
Pressing the joystick trigger lets
the magic begin. In a clear
voice with excellent intonation,
the computer speaks your in-
structions for you to the pilot,
such as "Delta 707, turn left to
2-7-0, descend to 4000 feet."
The pilot, in turn, responds
with a "Roger," complete with
radio hiss, as he proceeds to
follow your exact instructions.

During play, you might be
surprised by a message from a
pilot, such as "Emergency!
Emergency! This is Air France.
Eight minutes fuel" in which
you'd have to prepare for an
emergency landing.

At any time you can request
a pilot to identify his plane and
to specify its direction and
altitude. This is useful when
several planes are on the screen
at once, as it becomes difficult
to remember the instructions
given to each.

Planes can enter your air
area by taking off from an air-
port in your city, or by enter-
ing from an adjacent city. The
flight plans for each plane are

listed on the screen one minute
before the plane can take off,
or, in the case of an arrival
from another city, one minute
before the plane reaches your
area. The flight plans also in-
dicate the destination of each
plane. The plane might have to
land at an airport in your city,
or it might have to be directed
to another city. The hardest
part of all of this is avoiding
conflicts. A conflict condition
occurs when two or more
planes are closer than safety
standards allow. Unless two
planes are 1000 or more feet
apart in altitude, they must be
separated from each other by
three miles. If the planes do not
meet this safety requirement, a
conflict warning will flash on
the screen. The longer you
have a conflict situation, the
more points you lose in your
calculated rating at the end of
the game. Additionally, you
run the risk of having a mid-air
collision.

Planes of various speeds add
to the difficulty on the higher
levels. You must have keen
foresight in avoiding conflicts
by taking into consideration
that the Concorde flies two
times as fast as a jet, which flies
twice as fast as a light plane.

At the end of your shift,
you're given your salary, and
are rated on a variety of fac-
tors. Successful landings and
exits, and proper handling of
emergencies improve your
rating while flight delays and
conflict times lower it. Your
new rating may earn you a
promotion and extra pay, or it
may lose you your job. A mid-
air collision generally insures
your future unemployment.

Documentation

The documentation booklet
is clearly written and contains
a generous number of pictures,
diagrams and maps to make
game play even simpler to
learn. Unlike many of the
manuals accompanying
MicroProse's simulations, this
one contains no cute technical

Continued on page 143

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Kennedy Approach Continued from page 142

specifications and jargon. There is, however, an appendix of air traffic control terms for those interested in such.

Conclusions

Kennedy Approach is a good simulation made 300% better with the addition of the synthesized voice. The simulation appropriately and effectively uses this talking feature to add an entirely new dimension of realism, as no game has done before.

Since I am not an air traffic controller, I cannot judge the accuracy of the simulation, but it would be fair to say that the tension and the excitement have been faithfully duplicated. Another job well done, MicroProse.

Ratings For Kennedy Approach

- * FAIR
- ** POOR
- *** GOOD
- **** EXCELLENT

Design ****
Amusement level ****
Documentation ****
Value ***
Average ****
Kennedy Approach ****

Available for:

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Software, 120 Lakefront
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Applying The Atari Continued from page 140

Next Month

We'll learn how *ATASCH* Lister works, enter a program to read a light pen, learn how to redefine the keys of the numeric keypad, answer more reader mail, and look at some other good stuff.

Reader's questions, comments and contributions are welcome. Please enclose a self-

COMPUTER SHOPPER, JULY 1985

Page 143

addressed, stamped envelope
(SASE) for a personal reply.

A cassette or diskette of any program listed in this column is available from the author for \$5.00, postpaid. Specify DOS or DOS 3 when requesting a diskette.

Program Perfect is a utility used to check for typing errors in programs entered from this column. Readers may send a SASE for a listing or \$5.00 for a cassette or diskette.

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